

Claims:

1. A multi-dosage liquid pharmaceutical formulation of human growth hormone consisting essentially of human growth hormone at a concentration of from about 5 mg/ml to about 100 mg / ml, glycine, a buffer, a non-ionic surfactant, and a preservative, said pharmaceutical formulation having a tonicity of from about 100 to about 500 mosm/kg and having a pH of from about 6.1 to about 6.3.
2. The pharmaceutical formulation according to claim 1, wherein the concentration of human growth hormone is from about 6 mg/ml to about 14 mg/ml.
3. The pharmaceutical formulation according to claim 2, wherein the concentration of human growth hormone is about 6.67 mg/ml.
4. The pharmaceutical formulation according to claim 1, wherein the concentration of glycine is from about 5 mg/ml to about 75 mg/ml.
5. The pharmaceutical formulation according to claim 1, wherein the concentration of glycine is about 15 mg/ml.
6. The pharmaceutical formulation according to claim 1, said pharmaceutical composition being substantially isotonic.
7. The pharmaceutical formulation according to claim 1, wherein the buffer is selected from the group consisting of a phosphate buffer, a citrate buffer, an acetate buffer and a formate buffer.
8. The pharmaceutical formulation according to claim 6, wherein the buffer is a phosphate buffer.
9. The pharmaceutical formulation according to claim 1, wherein the buffer has a concentration of from about 5 mM to about 100 mM.

10. The pharmaceutical formulation according to claim 1, wherein the buffer has a concentration of about 10 mM.
11. The pharmaceutical formulation according to claim 1, wherein the buffer is a phosphate buffer having a concentration of about 10 mM.
12. The pharmaceutical formulation according to claim 1, wherein the non-ionic surfactant is selected from the group consisting of a poloxamer and a polysorbate.
13. The pharmaceutical formulation according to claim 1, wherein the non-ionic surfactant is a poloxamer.
14. The pharmaceutical formulation according to claim 1, wherein the non-ionic surfactant is poloxamer 188.
15. The pharmaceutical formulation according to claim 1, wherein the non-ionic surfactant is present at a concentration of from about 0.05 to about 4 mg/ml.
16. The pharmaceutical composition according to claim 1, wherein the non-ionic surfactant is present at a concentration of about 2 mg/ml.
17. The pharmaceutical composition according to claim 1, wherein the non-ionic surfactant is poloxamer 188 being present at a concentration of about 2 mg/ml.
18. The pharmaceutical formulation according to claim 1, wherein the preservative is selected from the group consisting of benzyl alcohol, meta-cresol, methyl paraben, propyl paraben, phenol, benzalkonium chloride, benzethonium chloride, chlorobutanol, 2-phenoxyethanol, phenyl mercuric nitrate and thimerosal.
19. The pharmaceutical formulation according to claim 1, wherein the preservative is benzyl alcohol.
20. The pharmaceutical formulation according to claim 1, wherein the preservative is benzyl alcohol being present at a concentration of from about 7 mg/ml to about 12 mg/ml.

21. The pharmaceutical formulation according to claim 1, said pharmaceutical composition having a pH of about 6.2.

22. The pharmaceutical composition according to claim 1, essentially consisting of
6.67 mg/ml human growth hormone,
15 mg/ml glycine,
10 mM sodium phosphate buffer,
2 mg/ml poloxamer 188,
9 mg/ml benzyl alcohol,
and having a pH of 6.2.

23. A kit comprising an injection device and a separate container containing a multi-dosage liquid formulation of human growth hormone according to claim 1.